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ABSTRACT

Two constructs integral to the interpersonal development of late adolescents, to their continuing parental attachment and to social support, were investigated to assess whether they were conceptually distinct and related to indices of adjustment following a romantic relationship. Undergraduate students (N=241) who had experienced a relationship breakup within the last year participated in the study. As hypothesized, analyses revealed that current attachment levels were related to each of the outcome variables. Indices of social functioning accounted for additional variance only when conceptualized as perceived connection to the social environment, but not in terms of perceived support from family and friends. The results are discussed in relation to counseling interventions with clients experiencing relationship difficulties. (Contains 89 references and 3 tables.) (JDM)

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RUNNING HEAD: Relationship of attachment and social environment

Relationship of attachment and social environment to college students' adjustment following relationship breakup

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Abstract

Two constructs integral to the interpersonal development of late adolescents, continuing parental attachment and social support, were investigated in this study to assess whether these constructs are (1) conceptually distinct and (2) related to indices of adjustment following a romantic relationship breakup. Participants were 241 undergraduate students (M age = 20.6) who had experienced a relationship breakup within the last year. As hypothesized, hierarchical regression analyses showed that current attachment levels were related to each of the outcome variables. Indices of social functioning accounted for additional variance only when broadly conceptualized as perceived connection to the social environment, not in terms of perceived support from family and friends. Implications for counseling interventions with clients experiencing relationship difficulties are discussed.

Relationship of attachment and social environment to college students' adjustment following relationship breakup

The transition to college is a critical juncture in the interpersonal development of late adolescents, particularly since it is often entails living away from home and family members for the first time. Research suggests that two constructs integral to this process, continuing parental attachment and social support, are both conceptually similar (Asendorpf & Wilpers, 2000; Blain, Thompson, & Whiffen, 1993; Mullis, Hill, & Readdick, 1999; Wallace & Vaux, 1993) and related to indices of well-being indicative of successful college adjustment (Coble, Gantt, & Mallinckrodt, 1996; Holmbeck & Wandrei, 1993 Kenny & Donaldson, 1991; Lapsley, Rice, & FitzGerald, 1990; Rice, FitzGerald, Whaley, & Gibbs, 1995). For example, childhood attachment and perceptions of social support in adulthood have been linked, with the finding that those who retrospectively reported their mothers as demonstrating more attachment behaviors had higher ratings of current social support than those with mothers exhibiting fewer behaviors (Flaherty & Richman, 1986).

Concurrent ratings of attachment and social support in adults also reveal associations. In studies assessing perceptions of available social support, securely attached adults have reported more available social support than their less securely attached counterparts (Davis, Morris, & Kraus, 1998; Florian, Mikulincer, & Bucholtz, 1995; Larose & Boivin, 1997). Moreover, those with a secure attachment style have been shown to be more likely to seek support in times of need (Collins & Feeney, 2000; Herzberg, Hammen, Burge, Daley, Davila, & Lindberg, 1999; Ognibene & Collins, 1998) and to be more satisfied with their social support network than those with insecure attachment styles (Priel & Shamai, 1995).

The empirical evidence of an association between attachment and social support

underlines the need to determine whether social support and attachment are conceptually distinct or represent the same construct measured in different ways. This issue has important theoretical and practical ramifications, since both constructs continue to be investigated independently and the implications of these divergent literatures for counselors are therefore unclear. The present study was designed to examine the relative contribution of both attachment and perceptions of the social environment to indices of psychosocial functioning among college students. We conducted this investigation using a sample of college students who had experienced a romantic relationship breakup in the past year since such events are both a common stressor in this population (McCarthy, Lambert, & Brack, 1997) and theoretically relevant to both attachment and social support research.

While the theoretical conceptualizations of attachment and social support are distinctly different, these constructs are often operationalized in similar ways. Attachment pioneers Bowlby (1979; 1988) and Ainsworth (1989) defined attachment as the emotional bond experienced with another who is sensed as a source of security and who provides a secure base anchoring exploration. Secure attachment has also been described in terms of "felt security" in relationships with significant others (Sroufe & Waters, 1977), with the implication being that securely attached individuals go through life with the unconscious belief that there will be someone to help when they are in need. In other words, security of attachment is theoretically associated with a perception of available social support. Insecure adults, by contrast, may be more likely to fear loss of social support, such as through abandonment by important attachment figures (West, Livesley, Reiffer, & Sheldon, 1986).

Bowlby (1979; 1988) and Ainsworth's (1989) clear conceptualization of attachment means that there appears to be little confusion about the construct within the attachment literature. This is not the case with social support, which is defined in widely varying ways

within the literature. In some studies "social support" is quantified simply in terms of number of people in a self-reported social network or, even more crudely, as whether the respondent is married or not (Tardy, 1985). However, assessing social support in this manner may not approximate the importance or complexity of support provided by friends and family, particularly with respect to weathering stressful life events. Another approach is to quantify social support as the sum total of the various forms of support received from specific relationships (Procidano & Heller. 1983), for example by assessing the availability of support from a discrete number of persons in one's social network (e.g., Flaherty, Gaviria, & Pathak, 1983; Flaherty & Richman, 1986).

Yet another approach is to categorize social support into several dimensions, such as the emotional support provided by close friends or family; support derived from "belongingness" to a group with a shared sense of identity; appraisal support offered by others in talking through problems, and tangible support or practical help (Horsten et al. 1999; Orth-Gomer, 1998). However, dimensional descriptions of social support usually do not distinguish whether social support is a property of the environment or of the individual. This is particularly problematic if the assessment of social support is based on self-report measures, since such methods are obviously tied to subjective perceptions. However, self-report bias is not necessarily a threat to the validity of such measures if one conceptualizes social support as a function of perception, rather than an "objective" reality.

Defining social support in terms of an individual's perception of their social network is similar to the "felt security" component of secure attachment theorized by attachment researchers. Viewed in this way, the "felt security" that leads to the capacity to seek support and depend on others becomes characteristic of both secure attachment and sufficient levels of social support. With the shared foundation of "felt security", an individual with high social support

thus becomes conceptually identical to a securely attached individual (Bartholomew & Horowitz, 1991; Collins & Read, 1990).

In fact, the overlap between the two constructs of attachment and social support has led some researchers to conceptualize social support as originating in attachment working models of self and others (Sarason et al., 1991). In this view, both the perception and use of social support are rooted in the social worldview that develops from childhood experiences with caregivers. Several social support measures reflect this approach. For example, the Perceived Support Scale (SOC; Procidano & Heller, 1983) and the Social Support Questionnaire (SSQ; Sarason, Sarason, Levine, Basham, & Sarason, 1983) measure the degree of perceived support from one's family and friends. Similarly, the Social Provisions Scale (SPS; Cutrona, 1984) defines social support through a general assessment of perceived support as determined by the degree to which needs are met through the support network. Defining social support in this way (i.e., as the perception of support) appears popular among researchers, as indicated by the preponderance of studies utilizing the SOC (e.g., Blain et al., 1993) the SSQ (e.g., Priel & Shamai, 1995) and the SPS (e.g., Davis et al., 1998).

A lack of conceptual clarity as to how social support should be defined may suggest that the construct itself is unsatisfactory. Since interpersonal distress often arises from a generalized dissatisfaction with social relations as a whole, rather than with specific relationships, the construct of social connectedness may better describe important experiences with the social environment (Kohut, 1984; Lee & Robbins; 1995, Wolf, 1988). Defined as the non-relationship-specific perception of support from the social environment, the concept of social connectedness may allow researchers to disentangle generalized expectancies that support can be found in the environment from perceptions of support founded on close emotional relationships with others. As measured by the Social Connectedness Scale (SCS), social connectedness has been linked to

emotional well-being (Lee & Robbins, 1998) and loneliness (Lee & Robbins, 2000). However, as of yet, there has been no research examining the SCS along with measures of both attachment and social support. Thus, one goal of this study was to explore how a broader definition of social environment presented by the construct of social connectedness compares to a more traditional measure of perceived social support from family and friends in predicting adjustment following a relationship breakup when attachment is concurrently assessed.

A second goal of this study was to compare the extent to which attachment and social support predict emotional functioning. Although the concurrent impact of both constructs on emotional functioning has not been compared, both the attachment and social support literature provide evidence of separate, well-established links with emotional well-being and relationship functioning. Attachment, for example, has been labeled a theory of affect regulation (Kobak & Sceery, 1988). As Bowlby (1969) argued, childhood attachment experiences continue to exert an influence into adulthood because one's history of regulating distress with attachment figures leads to the formation of internal cognitive templates, called working models. These models guide emotional functioning in adulthood by dictating appraisal of current interpersonal situations and organizing rules and strategies for handling emotions as well as coping responses (Main, 1999). More specifically, while secure attachment is characterized by an open engagement with difficult attachment-related emotions, avoidant (child)/dismissing (adult) attachment status is associated with a tendency to ignore or minimize the affect and anxious ambivalent (child)/ preoccupied (adult) attachment status with a tendency to ruminate on and amplify the distress (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993).

Empirical evidence of the relationship between attachment and emotional adjustment is suggested by a number of findings. For example, secure attachment status has been linked to enthusiastic and persistent problem solving in toddlerhood (Matas, Arend, & Sroufe, 1978) and

to high levels of ego resiliency and curiosity in school settings (Arend, Gove & Sroufe, 1979). Additionally, secure attachment has been associated with less angry, more focused discussion by teens during problem-solving discussion with their mothers (Kobak et al., 1993) and better emotional functioning and less perceived stress in young adults (McCarthy, Moller & Fouladi, 2001).

Social support, like secure attachment, is also associated with better emotional functioning. For example, high levels of social support have been associated with better adjustment for those facing such stressful life events as cancer (Koopman, Hermanson, Diamond, Angell, & Spiegel, 1998) or recovery from childhood maltreatment (Runtz & Schallow, 1997). Conversely, low levels of social support have been linked with loneliness, anxiety, and depression (Davis et al., 1998; Priel & Shamai, 1995).

Considerable attention has also been paid in the literature to the separate contribution of attachment and social support in coping with interpersonal distress. One type of stressful experience that has been addressed by researchers is that of relationship breakup, with numerous studies documenting the distress associated with the dissolution of a romantic relationship (e.g., Choo, Levine, & Hatfield, 1996; McCarthy et al., 1997; Sprecher, Felmlee, Metts, Fehr , & Vanni, 1998). In keeping with research indicating the role of secure attachment in well-being, secure attachment has been shown to be a buffering factor in the distress following a relationship breakup (Birnbaum, Orr, Mikulincer, & Florian, 1997; Pistole, 1995). Similarly, the availability of social support has been linked with lower levels of stress following the ending of a marital relationship (Sansom & Farnill, 1997). These findings indicate that social support and a secure attachment style may independently contribute to one's adjustment following the breakup of a relationship. However, there is a dearth of research assessing the interplay between attachment and social support during stressful periods (Coble et al., 1996). Thus, the primary goal of this

study was to examine the distinct yet related ways in which social support and secure attachment are associated with the distress following the breakup of a romantic relationship.

In order to examine the differential role that various indices of attachment and social environment play in explaining emotional adjustment follow a relationship breakup, this study assessed the degree to which the variance in adjustment was related to social support and connectedness to the social environment, above and beyond the variance accounted for by attachment. Four dimensions of attachment were utilized: attachment style and attachment to parents, peers and romantic partners. Two measures of social environment were also used as predictors: one measure of perceived social support from family and friends and one measure of connectedness to the social world. Four measures of emotional adjustment were included: self-reported loneliness, hopelessness, perceived stress and symptomatology . Due to associations between attachment and social support (Coble et al., 1996; Larose & Boivin, 1997) and the established roles of attachment and social support in coping and adjustment (Ptacek, 1996), it was predicted that both attachment and indices of social functioning would contribute in related ways to adjustment. Additionally, because of the conceptual similarity between traditional definitions of social support and attachment, it was predicted that the SCS, with its broader definition of social environment, would surpass a perceived social support measure in predicting adjustment when attachment was measured simultaneously.

Method

Participants

Participants were 241 undergraduate students (age: $\underline{M}$ = 20.6, $\underline{SD}$ = 2.07, range 18-34) at a large, southwestern university who had experienced a relationship breakup within the last year ($\underline{M}$ = 5.45 months prior to the study, $\underline{SD}$ = 3.20, range 0.5 - 12 months). Sixty-one percent of participants were female and 39% were male; 36.6 % described themselves as seniors, 20.8% as

juniors 22.2% as sophomores, 18.0% as first years and 2.5% as "other". According to self-reported ethnicity, 61% of participants were Anglo, 19% Asian, 8% Hispanic, 4% African-American, 3.5% Bi-racial, 1% Multi-racial, and 3.5% Other. Participants had been in their relationships for varying amounts of time (M = 17.39 months, SD = 15.9 months, range: 1-75 months). Relationships were predominantly heterosexual in nature, with 96% of participants having been in a relationship with someone of the opposite sex.

Procedure and Instrumentation

Participants were recruited from several different undergraduate educational psychology classes over two semesters and completed the following attachment, social support and outcome measures as well as a demographic survey.

Attachment scales

Attachment Style Questionnaire (ASQ). This 40-item measure is rated on a 6-Likert type scale (1 = totally disagree, 6 = totally agree) and consists of five scales: Confidence, Discomfort with Closeness, Need for Approval, Preoccupation with Relationships, and Relationships as Secondary (Feeney, Noller, & Hanrahan, 1994). The authors state that the Confidence scale (ASQ-CON) corresponds with a secure attachment, while the other scales reflect dimensions of insecure attachment. Dismissing individuals are expected to score highest on Relationships as Secondary (ASQ-RS) and moderately high on Discomfort with Closeness (ASQ-DIS), scoring in the mid-range on the other scales. Preoccupied individuals are expected to score high on Preoccupation with Relationships (ASQ-PRE) and Need for Approval (ASQ-NA), low on Relationships as Secondary and in the mid-range on Discomfort with Closeness and Confidence. Those with a negative model of both the self and others (Fearful as conceptualized by Bartholomew & Shaver, 1998) are expected to score low on Confidence and high on the other scales.

As cited by the authors, internal consistency (N = 470) and test-retest reliability over 10 weeks (N = 295) for scores on the scales was as follows: Confidence (.80, .74); Discomfort with Closeness (.84, .74); Need for Approval (.79, .78); Preoccupation with Relationships (.76, .72); Relationships as Secondary (.76, .67). Internal consistency for each of the five scales for this study's sample was Confidence .84, Discomfort with Closeness .87, Need for Approval .71, Preoccupation with Relationships .80, Relationships as Secondary .75.

The instrument authors state that validity of the ASQ is suggested by correlations in the expected direction with another attachment style instrument and with two measures assessing personality and intimacy, and conflict and parenting style, respectively (Hazan & Shaver, 1987).

Inventory of Parental and Peer Attachment (IPPA). This 75-item inventory assesses affective and cognitive dimensions of the current parental and peer attachment of college students and adolescents (Armsden & Greenberg, 1987; 1989). There are 25 items on each of three scales measuring attachment to the mother, father, and peers (IPPA Mother, IPPA Father, IPPA Peers). While an earlier version of the IPPA assessed attachment to parents as a single construct (Armsden & Greenberg, 1987), the authors later revised the scale to assess attachment to mother and father separately (Armsden & Greenberg, 1989). This revised version of the instrument has been used in several studies of late adolescent attachment (Brack, Gay, & Matheny, 1993; McCarthy, Brack, Brack, Liu, & Carlson, 1998). Armsden and Greenberg (1987) reported internal consistency (Cronbach's alpha) scores that ranged from .86 to .91 and test-retest reliability scores over a three-week period of .93 for their overall parental attachment scale; internal consistency estimates for scores from the separate mother and father scales has been reported at .89 and .88 respectively (Papini, Roggman, & Anderson, 1991). In this study, Cronbach's alpha for scores on the Maternal Attachment scale was .96 , .95 for scores on the Paternal Attachment scale, and .94 for scores on the Peer Attachment scale.

Armsden and Greenberg (1987) provided evidence for the convergent and concurrent validity of the IPPA with significant correlations between IPPA scores and measures of family support, conflict and cohesiveness, self-esteem, life satisfaction, depression and anxiety and resentment and alienation. In addition, numerous subsequent studies have provided further evidence of the validity of the IPPA (for a review, see Lopez & Gover, 1993).

Experiences in Close Relationships (ECR). (Brennan, Clark, & Shaver, 1998) This instrument consists of 36 items on a 7 - point scale. The ECR seeks to assess adult romantic attachment along two dimensions: avoidance (ECR-AVOID) and anxiety (ECR-ANX). The instrument was derived from a factor analysis of 14 existing measures of adult romantic attachment using a sample of over 1000 undergraduate students. The two scales correspond with a four category model of attachment proposed by the instrument authors, in which secure individuals are those conceptualized as low on avoidance and anxiety, dismissing adults are seen as low on anxiety but high on avoidance, preoccupied adults as low on avoidance and high on anxiety and fearful adults as high on both anxiety and avoidance. Internal consistency for scores on the avoidance scale is reported at .94 and for scores on the anxiety scale at .91. For the current study the corresponding alphas were .94 and .93 respectively. An Item Response Theory exploration of the ECR and three other measures of romantic relationships found that the ECR scales had markedly higher test information functions than the comparable scales (Fraley, Waller & Brennan, 2000).

Social support scales

Perceived Social Support (SOC). This instrument consists of 40 items (Procidano & Heller, 1983). Half ask respondents about family (SOC Family) and half about friends (SOC Friends). The instrument is designed to measure the extent to which an individual perceives that his/her needs for support, information, and feedback are fulfilled by friends and family. The

authors report reliability in a sample of college students of .88 for scores on the friends scale and .90 for scores on the family scale. Corresponding internal consistency in a clinical sample of adolescents was .86 and .85 (Gavazzi, 1994). The authors also report a test-retest reliability of .83 for an earlier 35-item version of the instrument. Factor analysis of each scale gave a single-factor result, indicating strong internal consistency. In the current sample, the Cronbach alphas were .74 for the family scale and .86 for the friends scale.

The authors conducted three validation studies and found negative correlations with measures of distress and psychopathology and positive correlations with assessments of social competence and sociability. Perceived social support appeared to be related to but distinct from actual aspects of social network. A subsequent meta-analysis of data found further evidence of construct validity of the instrument (see Procidano, 1992, for a review).

Social Connectedness Scale (SCS). This 14-item scale (Lee, Draper, & Lee, in press; Lee & Robbins, 1995) measures the degree of interpersonal closeness that an individual experiences in his or her social world. The SCS was created from a factor analysis of items measuring belongingness. Two factors emerged, with one becoming the SCS and the other evolving into the Social Assurance Scale. In the test validation sample composed of 313 college students, reliability for scores on the SCS was high. Coefficient alphas were .91 for internal consistency and .96 for test-retest reliability, calculated over a two-week interval. In terms of validity, the SCS has been shown to be significantly correlated with self-esteem, academic performance, and other measures of personality (Lee & Robbins, 1998). In the current study, the internal consistency of the SCS was .96.

Adjustment measures

UCLA Loneliness Scale (LS). This 20-item scale (Russell, 1996; Russell, Peplau, & Cutrona, 1980; Russell, Peplau, & Ferguson, 1978) measures perceived loneliness on a four-

point scale. The instrument has been used with a range of populations, including college students, nurses, teachers and elderly individuals (Russell, 1996). Coefficient alphas across various populations ranged from .89 to .94, and test-retest reliabilities of .73 over 12 months were found (Russell, 1996). Other authors have reported split-half reliability of .88 and coefficient alphas of .90 for a sample of college students (Hartshorne, 1993). In the current study, coefficient alpha was .95. Confirmatory factor analysis by the instrument authors supports the feasibility of a unidimensional factor structure.

Convergent validity of the instrument is suggested by strong positive correlations with other instruments assessing loneliness and construct validity by negative correlations with measures of social support (Russell, 1996). Strong correlations in the expected directions were also found for measures of depression, self esteem, burnout, well-being and health (Russell, 1996; Russell et al., 1980; Russell et al.,1978). One recent exploration of the similarities and differences between seven measures of loneliness found that the UCLA Loneliness scale principally taps social loneliness or loneliness in relationship to friends or wider social groups (Cramer & Barry, 1999).

The Hopelessness Scale (HS). This 20 item true/false scale (Beck, Weissman, Lester, & Trexler, 1974) is designed to measure subjects' degree of pessimism about the present situation and future. In the current study, coefficient alpha was .91. Evidence of concurrent validity was suggested by comparison of HS scores with clinical ratings of hopelessness (alpha = .74 in a general practice sample) and with other instruments designed to measure negative attitudes about the future (for example the pessimism item of the Beck Depression Inventory (alpha = .63) (Beck et al.,1974). Subsequent studies have found that the HS is highly correlated with depression (Young et al.,1996) and predicts neuroticism (Velting, 1998). For further information about the validity and reliability of this widely used instrument, see Beck and Steer (1988).

Hopkins Symptom Checklist (HSC). This 21-item instrument is designed to measure symptom distress. The three scales are: General feelings of distress, Somatic distress and Performance difficulty (Green, Walkey, McCormick, & Taylor, 1988). A total distress score can also be calculated and was used in this study. The 21 item HSC was derived through factor analysis from a longer inventory using samples of patients, nurses and college students in both America and New Zealand. A fourth sample was used to assess the instrument's reliability. The Cronbach's alphas for the scores were: Performance difficulty .85, Somatic distress .75, General feelings of distress .86, total distress score .90. In the current study the Cronbach's alphas were .92 for the total distress score, .83 for Performance difficulty, .84 for Somatic distress, and .88 for General feelings of distress. Validity of the HCL is suggested by the fact that the total HCL distress score successfully discriminated between a clinical and nonclincial population sample and was sensitive to changes in distress over the course of therapy (Deane, Leathem, & Spicer, 1992).

Perceived Stress Scale (PSS). The PSS is a 14-item index designed to measure the degree to which situations in one's life are appraised as stressful (Cohen, Kamarck, & Mermelstein, 1983). Scale instructions ask respondents to report the degree to which they felt or thought certain things over the last month. The authors report coefficient alphas for scores on the scale between .84 and .86 in three different samples. Test-retest reliability over 2 days was .85 and over six weeks in a smoking cessation sample was .55, which the authors suggest is consistent for a state measure. In this study, Cronbach's alpha for scores on the PSS was .86.

Cohen et al. (1983) also assessed the concurrent validity of the PSS with two samples of college students and one sample of enrollees in a smoking cessation program and found correlations ranging from .52 to .76 between scores on the scale and reported depressive and

physical symptomatology, social anxiety (a range of .37 to .48) and utilization of health services (.20).

Results

The bivariate associations of each of the adjustment measures with the measures of attachment and social environment are provided in Table 1. Sex differences were examined on the set of measures in this study using a MANOVA for those study participants with complete data across all measures who also provided sex identification information ($n = 173$). The Box M F-test of homogeneity of covariance matrices was conducted to examine the comparability of the covariances among the measures for males and females and a statistically significant difference was found (F (153,55307) = 1.40, $p = .001$). The results of the MANOVA revealed statistically significant overall mean differences as a function of sex (Wilks' Lamba = .639, F (17, 155) = 5.512, $p < .001$; $\varepsilon^2 = .361$) and this test was followed-up with univariate tests for each measure. The results of the follow-up univariate tests indicated statistically significant sex differences for scores on loneliness (M_{Male}=64.07, M_{Female}=69.10, F (1,171) = 9.98, $p < .002$, $\varepsilon^2 = .055$), ASQ-DIS (M_{Male}=34.98, M_{Female}=31.79, F (1,171) = 5.19, p =.024 .001, $\varepsilon^2 = .029$), ASQ-RS (M_{Male}=19.60, M_{Female}=15.73, F (1,171) = 26.00, $p < .001$, $\varepsilon^2 = .132$), IPPA Peer (M_{Male}=95.45, M_{Female}=110.11, F (1,171) = 46.86, $p < .001$, $\varepsilon^2 = .215$), ECR-AVOID (M_{Male}=58.16, M_{Female}=50.46, F (1,171) = 6.18, $p = .014$, $\varepsilon^2 = .035$), and SCS (M_{Male}=92.92, M_{Female}=100.69, F (1,171) = 9.26, $p = .003$, $\varepsilon^2 = .051$). The presence of statistically significant differences on six of the tests of mean differences as well as the test of comparability of the covariance matrices suggested that sex be examined in the following analyses.

Ordinary least squares regression analysis was used to examine the association of attachment and social environment measures to adjustment while controlling for sex and length

of time since the breakup (see Table 2). The analyses were conducted using a hierarchical approach. The sequence of variable entry was as follows: 1) length of time since breakup and gender, 2) the five subscales of the ASQ, 3) the three scales of the IPPA assessing mother, father, and peer attachment, 4) the two subscales from the ECR, 5) scales from the two measures of social environment (SOC-Family, SOC-Friends, and SCS). This analytic approach was used for the regression analyses for each of the adjustment measures: loneliness, hopelessness, perceived stress, and symptomatology.

The first step of the regression analyses for loneliness and symptomatology showed that a statistically significant proportion of the variance in the measures was explained by sex and length of time since breakup ($R^2 = .059$, $p = .001$; $R^2 = .060$, $p = .001$, respectively); sex and length of time since breakup was not statistically significant in the first step for hopelessness or perceived stress ($R^2 = .007$, $p = .459$ and $R^2 = .024$, $p = .070$, respectively). The inclusion of the measures of attachment style (ASQ) as the second block predictor variables in each model resulted in a statistically significant increase in proportion of accounted variance for loneliness, hopelessness, perceived stress, and symptomatology ($\Delta R^2 = .570$, $p < .001$, $\Delta R^2 = .356$, $p < .001$, $\Delta R^2 = .318$, $p < .001$, $\Delta R^2 = .333$, $p < .001$, respectively). With the inclusion of the measures of attachment to father, mother, and peers (IPPA) in the third block of predictor variables, there was a statistically significant increase in proportion of accounted variance for loneliness and hopelessness ($\Delta R^2 = .073$, $p < .001$, $\Delta R^2 = .053$, $p < .001$, respectively); no statistically significant increment in proportion of explained variance was obtained for perceived stress and symptomatology ($\Delta R^2 = .006$, $p = .586$, $\Delta R^2 = .007$, $p = .520$, respectively). The inclusion of dimensions of romantic attachment (ECR avoidance, ECR anxiety) in the fourth block did not yield a statistically significant increase in proportion of accounted variance for loneliness, hopelessness, perceived stress, or symptomatology ($\Delta R^2 = 0.00$, $p = .908$, $\Delta R^2 = .013$, $p = .10$,

ΔR^2 = .014, p=.116, ΔR^2 = .007, p=.319, respectively). In the fifth and final step, the inclusion of measures of social environment (SOC-Family, SOC-Friends, SCS) showed statistically significant increments in the proportion of accounted variance for loneliness, hopelessness, perceived stress, and symptomatology (ΔR^2 =.090, p<.001, ΔR^2 =.027, p=.02, ΔR^2 =.033, p=.01, ΔR^2 =.049, p=.001, respectively).

In the full model for loneliness (R^2 = .792, F(15, 202) = 51.35, p<.001), the regression coefficients for the following predictors were statistically significantly different from zero (ASQ-RS β= .106, p =.01; IPPA-Peer β = -.242, p<.001; SCS β = -.588, p<.001); no other regression coefficients were statistically significant in the full model. In the full model for hopelessness (R^2 =.456, F(15, 202) = 11.28, p<.001), the regression coefficients for the following predictors were statistically significantly different from zero (ASQ-CON β = -.197, p = .046; ASQ-DIS β = -.191, p= .01; ASQ-NA β = .163, p= .036; IPPA Peer β = .240, p=..003; SCS β=.295, p<.01); no other regression coefficients were statistically significant in this model. In the full model for perceived stress (R^2 =.395, F(15, 202) = 8.81, p < .001), the regression coefficients for the following predictors were statistically significantly different from zero (ASQ-PRE β = .296, p= .002; SCS β = -.357, p<.001); no other regression coefficients were statistically significant. In the full model for symptomatology (R^2 =.455, F(15,202) = 11.25, p < .001), the regression coefficients for the following predictors were statistically significantly different from zero (time since breakup β = -.187, p =.001; ASQ-NA β = .212, p =.007; SCS β = -.442, p < .001); no other regression coefficients were statistically significant. These results are summarized in Table 3.

Though tolerance and variance inflation factor collinearity diagnostic threshold values did not identify specific predictors as problematic in these regression models, the small number of statistically significant regression coefficients in each of the final regression models and lack of representation of variables from some of the blocks which yielded statistically significant

increments in the proportion of accounted variance suggests the overlap of some of the predictors. Therefore an exploration of the completeness of models based only on those predictors with statistically significant regression coefficients in the final models was conducted. To this end, regression analyses were conducted to identify whether any additional predictors would provide a statistically significant increment in the proportion of accounted variance. For these analyses, the variables that emerged as significant predictors in the fifth and final step of each regression analysis were entered as a block, followed by forward selection of any of the remaining set of possible predictors. These analyses showed that for hopelessness, no other variables provided a statistically significant increment in the proportion of accounted variance above and beyond that already explained by ASQ-CON, ASQ-DIS, ASQ-NA, IPPA-Peer, and SCS ($\underline{R}^2$=.425, $\underline{p} < .001$). However, for loneliness, symptomatology, and perceived stress statistically significant increments were obtained. In the case of loneliness, the inclusion of ASQ-PRE provided an $\underline{R}^2$ increment of .005 ($\underline{p} = .036$) above and beyond that already explained by ASQRS, ATACHP, and SCS. In the case of symptomatology, the inclusion of ASQ-PRE provided an $\underline{R}^2$ increment of .016 ($\underline{p} = .015$) above and beyond that already explained by time since the relationship ended, SCS-TOT and ASQ-NA. And for perceived stress, the inclusion of gender and ECR-Avoid provided an $\underline{R}^2$ increment of .015 ($\underline{p} = .028$) and .012 ($\underline{p} = .042$) respectively above and beyond that already explained by ASQ-PRE and SCS-TOT. The small amount of variance accounted for by these additional predictors does not suggest further revision to the models.

Discussion

Navigating the aftermath of romantic relationship breakups can be challenging for late adolescents, especially in a college environment in which they are living away from the support of family members for the first time. This study investigated the differential contribution of two

conceptually linked constructs to the process, continuing attachment and perceptions of the social environment (commonly referred to as social support). The results suggested that when used in combination to predict adjustment following a relationship breakup, social support and attachment are not distinct constructs when the former is defined in terms of perception of support offered by individuals within one's social network. Instead, it was found that only a sense of connectedness to the wider social environment predicted adjustment beyond that explained by attachment. The implications of these findings for the attachment and social support literature will next be discussed, followed by acknowledgement of the studies' limitations, suggestions for future research, and the implications for counseling.

Attachment has been conceptualized as a theory of affect regulation and social functioning and in this study attachment style, as operationalized by the ASQ, was shown to account for at least one-third and as much as 57% of the variance in the outcome variables used. Examination of the bivariate relationship of the ASQ subscales (see Table 1) revealed that each was statistically significantly correlated with all four outcome variables in the predicted direction: the ASQ Confidence scale was positively related to outcome while the four other scales measuring aspects of insecure attachment were negatively related. This pattern of relationships was also found for ASQ subscales that emerged as predictors in the final step of the hierarchical regression models (see Table 3) with the single exception of the negative relationship of the ASQ-DIS scale to hopelessness. Since the opposite relationship was found at the bivariate level, this finding may be considered an artifact of the regression procedure (Pedhazur, 1982).

In the regression analyses, the ASQ was entered before the relational attachment scales because it was hypothesized that this instrument would provide the most global assessment of attachment. The results of the hierarchical regression analysis for predicting hopelessness

showed that three out of five of the ASQ scales (Confidence, Discomfort with Closeness and Need for Approval) were statistically significant predictors. Hopelessness is thought to be a core feature of depression (Velting, 1999) and both attachment theory and empirical research support the idea that insecure attachment is related to depression (for a review, see Dozier, Stovall, & Albus, 1999). Unsurprisingly, the outcome variable of loneliness was significantly predicted by a self-reported tendency to treat Relationships as Secondary. In addition, although the Confidence scale was not significant in the final model, the negative correlation between the two variables was .79 (see Table 1), which suggests the importance of this aspect of attachment style also in determining feelings of loneliness. Studies using an interview measure of attachment with a college student population have also found insecurity to be related to loneliness, with individuals classified as secure reporting less loneliness than dismissing (but not preoccupied) individuals (Kobak & Sceery, 1988). The outcome variables associated with current functioning, perceived stress and symptomatology, were predicted by two ASQ scales, Preoccupation and Need for Approval, respectively, which are associated with a preoccupied attachment style (Feeney et al., 1994). This is consistent with theory in that dismissing individuals are hypothesized to minimize or repress their anxiety and preoccupied individuals to ruminate on their difficulties, this tending to reports of high levels of distress (Kobak et al., 1993; Hesse 1999).

Attachment theory suggests that with maturation, individual attachment relationships are incorporated into a generalized orientation toward the social environment (Main, 1999) and it is this generalized orientation that the ASQ attempts to capture. In support of this, in the final regression model, neither parental attachment nor romantic attachment significantly predicted functioning above and beyond that accounted for by attachment style. However, this finding may also reflect the fact that the majority of the college student respondents were not living at

home (98%) and were not in a (new) relationship at the time that they completed the measures (82%). It must also be recognized that romantic attachment may have failed to add significant predictive value simply because the variance between outcome variables and romantic attachment was already accounted for by the other attachment scales.

Given the failure of romantic and parental attachment to add predictive power, it is doubly interesting that attachment to peers was a significant predictor of emotional functioning, even when entered into the analysis after attachment style. A considerable body of research testifies to associations between attachment security assessed in infancy and more harmonious relationships with peers through adolescence (Berlin & Cassidy, 1999). Since infant attachment status is assessed in terms of interactions with primary caregivers, typically parents, this suggests that parental attachment is predictive of peer attachment. However, this study's college student respondents are developmentally in transition from a childhood emotional dependence on parents into more "adult" attachment relationships. Thus while early peer relationships can be important influences on later mental health (for a review, see Parker & Asher, 1987), for this population, it seems plausible that the quality of *current* peer relationships may be especially significant for emotional functioning. Importantly in this study, peer attachment predicted hopelessness and loneliness, the affective outcome variables, but not perceived stress or symptomatology. That peer relationships influence how college students <u>feel</u> but not how they self-report coping with interpersonal challenges (as measured in this study by levels of perceived stress and symptoms), may reflect that choice of coping strategies is dictated not by current interpersonal events but by early, childhood, attachment experiences. Attachment theory suggests that a history of poor relationships will consistently cause a child to adopt less than optimal strategies—such as avoidance—to regulate emotional distress (Main, 1999) and these strategies may therefore be

less influenced by current relationships than the corresponding emotional states toward which they are directed.

While attachment did predict adjustment in this study, as expected, perceived social support did not. The failure of the SOC to predict any of the four outcome measures is likely due to an overall weak association with these measures in combination with high correlations between maternal and paternal attachment as assessed by the IPPA and perceived social support from family as measured by the SOC (54% and 46% respectively). The latter relationship suggests that the SOC may be measuring a construct similar to the IPPA and adds additional weight to concerns raised in previous studies about item overlap between attachment and social support measures (Asendorpf & Wilpers, 2000). As suggested by the abundance of findings that strongly link attachment with social support (e.g., Bartholomew & Horowitz, 1991; Collins & Read, 1990; Wallace & Vaux, 1993), these correlations may be evidencing the logical association between two measures that assess if not the same, then at least significantly similar constructs. Should this be the case, the SOC's lack of unique contribution to the regression analyses might be attributable to its sharing variance with the IPPA. Because the IPPA was measured earlier in the regression equation, it follows that the SOC would fail to add unique variance later in the analysis.

However, the importance of social support in mediating life stresses and contributing to well-being should not be discounted. Numerous studies attest to the link between social support and such things as coping with stress (e.g., Valentiner, Holahan, & Moos, 1994) and problem-solving and leadership abilities (Sarason, Sarason, & Shearin, 1986). Moreover, some studies have teased apart social support by examining the particular aspects that facilitate coping and adjustment. For instance, Jung (1990) found that the amount of support received, the amount given, and the degree of reciprocity within the supportive relationship contributed to coping in

different degrees. Thus by focusing on specific aspects of social support in addition to refining the study of social support with more theory-driven, methodologically sound approaches, as suggested by Sarason, Sarason, and Pierce (1990), the importance of social support vis a vis other related constructs such as attachment could be demonstrated.

While perceived social support failed to explain any more variance in the outcome measures than that already explained by the attachment variables, the broader concept of social connectedness did add predictive power. This may suggest that social connectedness represents a construct distinct from those measured by the other predictor variables. In particular, the fact that the SCS predicted unique variance despite being placed last in the regression analysis attests to its predictive utility, as variables placed later in a regression analysis are increasingly less likely to contribute unique variance than those placed in the beginning (Pedhazur, 1982). Since the SCS and ASQ Confidence scales have two-thirds of their variance in common (r = .82), it might also be implied that social connectedness is not distinct from at least one aspect of secure attachment.

In order to understand the differences and similarities between attachment and the SCS, it is helpful to refer to Bowlby's (1969) concept of internal working models. It was Bowlby's contention that early caregiving experiences with specific caregivers led to the development of cognitive templates, or sets of expectancies about the self, others and world. One way, therefore, to understand the relationship between attachment and social connectedness is in terms of their representing different sets of working models, referring on the one hand to intimate emotional relationships and on the other to the more general social world an individual inhabits. An alternative explanation centers on the very high negative correlation (r = .86) between the SCS and loneliness as measured by the UCLA Loneliness scale. It is possible that the SCS uniquely predicts loneliness because this instrument assesses loneliness in terms of social and not intimate

attachment relationships (Cramer & Barry, 1999). This however does not explain why the SCS explains additional variance in the other three outcome variables as well.

Limitations and suggestions for future research

Several limitations need to be observed with regard to these findings. First, while only participants who had experienced a relationship breakup in the past year were included in the study, it should be noted that outcome variables used may not be causally connected to this event. Second, due to restrictions in the population used, replication is needed using with more diverse samples before generalizing the results of this study. Third, caution is warranted in interpreting the results of self-report methodology that may or may not correspond closely with the phenomena they are purported to measure.

Further research is necessary to clarify the relationship of social support and attachment with respect to a person's well-being. The relative predictive power of both constructs needs to be examined with respect to a wider range of interpersonal events, including those involving current romantic partners, family members, and even co-workers. In addition, while several aspects of attachment were measured in this study (attachment style, parental, romantic, and peer attachment) only two measures of the social environment were included (perceived social support and social connectedness). Tardy (1985) has proposed numerous other aspects of the social environment be considered as well, including whether support is received or provided, merely available or actually acted upon, the nature of its content (emotional, instrumental, informational), and what aspect of the environment is being assessed (for example, family, close friends, community, etc). Finally, it would be important to follow a correlational study such as this one with a longitudinal study in which firmer conclusions about the causal nature of these variables could be assessed.

Implications for counseling

If supported in future research, the results of this study could have important implications for counselors working with college students, particularly since relationship difficulties are among the most common reason that students seek counseling services (McCarthy et al., 1997). In this study we found that once differences in attachment style and peer attachment were accounted for, perceptions of social support from family and friends were not found to account for additional variance in adjustment following relationship breakup. However, even in the presence of these other variables, social connectedness did contribute to explaining variance in adjustment. Since both the constructs of attachment and social connectedness emphasize the formation of relatively enduring templates that shape beliefs about the self, others, and the social environment, it might reasonably be concluded that such templates be targeted in counseling interventions.

Attachment theorists refer to such templates as working models. While attachment theory does not represent an explicit approach to counseling, suggestions for using its precepts as part of interventions do exist (e.g. Slade, 1999). One such avenue for college students who can trace current relationship difficulties to family of origin issues would be to help them reexamine their familial relationships (Kenny & Rice, 1995; McCarthy, 1998). Support for the efficacy of such an approach comes from a study in which it was found that adults with poor attachment histories were able to improve present functioning by examining the meaning of childhood experiences and its effect on them (Main, Kaplan, & Cassidy, 1985). The role of the therapist in this type of intervention would be to provide a secure base that allows the client to explore difficult and previously excluded experiences with attachment figures (Slade, 1999). By reintegrating previously repressed material into working models of attachment relationships, more coherent working models and more secure attachments can be achieved.

Clients whose attachment histories are manifested through difficulties in current relationships may also be directly encouraged to explore their expectations of current relationships and the potential role of their attachment history in influencing this process (McCarthy, 1998). An alternative method is for the counselor to use the counseling relationship itself to rework the client's attachment history (Biringen, 1994). Implicit in this approach is the idea that a client's style of relating to a counselor is a reflection of their attachment history and therefore that counseling offers a special opportunity in which clients' attachment bonds to their counselors can be used as material for understanding and changing their attachment functioning (Pistole & Watkins, 1995).

Since continuing attachment in adolescence and adulthood has been hypothesized to have an ongoing impact on emotional functioning and perceived stress levels (Braver, Burnberry, Green, & Rawson, 1992; Gilbert, 1992), college counselors may also want to assess students' level of attachment to significant others at the outset of counseling. This may be particularly important if presenting concerns such as mood disorders or clinical issues relevant to attachment are reported, including difficulties with intimate relationships. Assessment can be accomplished as part of a clinical interview or with objective measures such as those used in this study that are relatively quick and easy to administer.

While attachment provides a context for examining how templates of the social world were formed, Lee and Robbins (2000) suggest that social connectedness provides a way of understanding a client's current template for understanding and organizing the social world. They further suggest that counselors consider how clients can satisfy their need for connectedness. Group counseling may be a particularly appropriate avenue of intervention, because this form of therapy provides a safe forum in which socially disconnected clients can explore relationships with others.

Finally, given the role of therapists in providing social support, it must be emphasized again that the results of this study do not refute the large body of literature attesting to the importance of social support in coping with stressful life events (for a review of this literature, see Matheny, Aycock, Pugh, Curlette, & Canella, 1986). Rather, these findings underscore the complexity of the social environment and the importance of clear conceptualizations of the various psychological processes at play in social relationships. In this study, internal templates for viewing the world, both from an attachment and social connectedness perspective, were found to be important with respect to adjustment in persons who had experienced a relationship breakup. In this context also, perceptions of available social support, while overlapping with some aspects of attachment, proved to have relatively weak explanatory power. Taken together, these findings might suggest that even if they perceive social support to be obtainable, clients saddled with templates that make them distrust offers of support might have difficulty taking advantage of these important resources. Counseling interventions in one form or other may therefore be necessary to allow such clients to take advantage of available social support.

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Table 1

Intercorrelation Matrix for Social Environment, Attachment, and Outcome Scales

Scales	ASQ-CON	ASQ-DIS	ASQ-RS	ASQ-NA	ASQ-PRE	IPPA Mother	IPPA Father	IPPA Peer	ECR AVOID	ECR ANX	SOC FRI	SOC FAM	SCS	LS	HSC	PSS	HS
ASQ-D	-.615	—															
ASQ-RS	-.457	.551	—														
ASQ-NA	-.511	.315	.265	—													
ASQ-PRE	-.467	.406	.265	.686	—												
IPPA Mother	.420	-.344	-174**	-187**	-.254	—											
IPPA Father	.351	-.259	-.123^{ns}	-.149*	-.235	.491	—										
IPPA Peer	.612	-.544	-.529	-.310	-.379	.314	.257	—									
ECR-AVOID	-.285	.406	.325	.103^{ns}	.090^{ns}	-.110^{ns}	-.046^{ns}	-.235	—								
ECR-ANX	-.306	.251	.171**	.453	.644	-215**	-.165*	-.243	-.003^{ns}	—							
SOC Friends	.134*	-.156*	-.054^{ns}	-.084^{ns}	-125^{ns}	.133*	.044^{ns}	.151*	-.065^{ns}	-.061^{ns}	—						
SOC Family	.195*	-204**	-.007^{ns}	-.066^{ns}	-181**	.537	.464	.062^{ns}	-.053^{ns}	-.158*	.392	—					
SCS	.822	-.616	-.499	-.468	-.471	.443	.383	.685	-.288	-.312	.183**	.224	—				
LS	-.793	.598	.544	.455	.479	-.395	-.318	-.728	.249	.321	-180**	-.212*	-.858	—			
HSC	-.460	.355	.331	.514	.510	-.229	-198**	-.382	.087^{ns}	.382	-.053^{ns}	-.112^{ns}	-.545	-.559	—		
PSS	-.423	.260	.192**	.445	.532	-211**	-.236	-.283	.00.8^{ns}	.415	-.112^{ns}	-.144*	-.472	-.459	.587	—	
HS	-.556	.279	.267	.450	.409	-.322	-.262	-.485	.039^{ns}	.337	-.076^{ns}	-177**	-.583	-.612	.554	.469	—

Table Continues

Table 1 (Continued)

Intercorrelation Matrix for Social Environment, Attachment, and Outcome Scales

Note. All correlations are statistically significant at $p < .001$ unless followed by the following notations: ^{ns} = not statistically significant, * = $p < .05$, ** = $p < .01$. ASQ-CON = Attachment Style Questionnaire (ASQ) Confidence Scale; ASQ-DIS = ASQ Discomfort with Closeness scale; ASQ-RS = ASQ Relationships as Secondary scale; ASQ-NA = ASQ Need for Approval scale; ASQ-PRE = ASQ Preoccupation scale; IPPA Mother = Inventory of Parental and Peer Attachment (IPPA) Maternal Attachment scale; IPPA Father = IPPA Paternal Attachment scale; IPPA Peer = IPPA Peer Attachment scale; ECR-AVOID = Experiences in Close Relationships (ECR) Avoidance scale; ECR-ANX = ECR anxiety scale; SOC Friends = Perceived Social Support (SOC) Friends scale; SOC Family = SOC Family scale; SCS = Social Connectedness Scale; LS = UCLA Loneliness Scale; HSC = Hopkins Symptom Checklist; PSS = Perceived Stress Scale; HS = Hopelessness Scale.

Table 2

R^2 Change Values and Significance Levels for Predicting Functioning with Attachment and Social Environment Scales

Criterion Variables	ΔR^2				
	Step 1	Step 2	Step 3	Step 4	Step 5
Loneliness	.059**	.570***	.073***	.000	.090***
Hopelessness	.007	.356***	.053***	.013	.027*
Stress	.024	.318***	.006	.014	.033*
Symptoms	.060**	.333***	.007	.007	.049**

Note. Variables added to the model at each stage of the analysis are as follows: Stage 1 = Time, Gender; Stage 2 = Attachment Style Questionnaire (5 subscales); Stage 3 = Inventory of Parental and Peer Attachment (3 subscales); Step 4 = Experiences in Close Relationships (2 subscales); Step 5 = Perceived Social Support Scale (2 subscales) and the Social Connectedness Scale (one score). * = $p < .05$, ** = $p < .01$, *** = $p < .001$.

Table 3

Final Regression Results for Predicting Functioning with Attachment and Social Environment Scales

	β								df	F	R^2
Criterion Variables	Time	ASQ-CON	ASQ-RS	ASQ-DIS	ASQ-PRE	ASQ-NA	IPPA-Peer	SCS			
Loneliness	-.053	-.027	.106*	.012	.035	.031	-.242***	-.588***	15,202	51.35	.792***
Hopelessness	.021	-.197*	-.003	-.191*	-.009	.163*	-.240**	-.295**	15,202	11.28	.456***
Stress	-.084	-.044	.014	-.085	.296**	.032	.053	-.357***	15,202	8.81	.395***
Symptoms	-.187**	.116	.103	-.022	.138	.212**	-.006	-.442***	15,202	11.25	.455***

Note: Only scales significant in the final model are included in the table. * $p < .05$; $p < .01$; *** $p < .001$; ASQ = Attachment Style Questionnaire, ASQ-RS = ASQ Relationships as Secondary scale, ASQ-CON = ASQ Confidence scale; ASQ-DIS = ASQ Discomfort scale; ASQ-PRE = ASQ Preoccupation with Relationships scale; ASQ-NA = ASQ Need for Approval scale; IPPA-Peer = Inventory of Parental and Peer Attachment scale; SCS = Social Connectedness Scale.